DOCUMENT RESUME

ED 137 410 TM 006 219

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TITLE The Menomonee Falls, Wisconsin Experience.
INSTITUTION Menomonee Falls Public Schools, Wis.
PUB DATE [Apr 77]
NOTE 57p.; Paper presented at the Annual Meeting of the American Educational Research Association (61st, New York, New York, April 4-8, 1977)

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS *Comparative Testing; Educational Assessment; *Functional Reading; High School Students; National Norms; National Surveys; Program Evaluation; Reading Tests; *School Districts; *Secondary Education; *Seniors; Sex Differences; Statistical Analysis; *Test Results
IDENTIFIERS *Menomonee Falls Public Schools WI; National Assessment of Educational Progress; Wisconsin (Menomonee Falls)

ABSTRACT

The focus of this study was to assess the 17-year-olds' ability to read functional reading tasks and to provide change if and where needed. This was a project between the Menomonee Falls, Wisconsin High Schools (MFHS) and the National Assessment of Educational Progress (NAEP) in the area of reading. Two hundred fourteen 17-year-olds were randomly selected to be tested by local administration guided and directed by NAEP personnel in light reading themes and five reading objectives. The non-parametric sign test was used by NAEP to test for significant differences between the MFHS students and the NAEP Year 02 national and urban fringe respondents. MFHS students read significantly better than the national or urban fringe students on four of the five objectives and equally as well on one objective. MFHS students read significantly better than the national or urban fringe students on seven of the eight reading themes and equally as well on one theme. MFHS-A students read better than MFHS-B students on two of the eight reading themes while MFHS-B students read better than MFHS-A students on four of the eight reading themes. Both MFHS A and B students read equally well on one reading theme. MFHS females read better than the national females tested while MFHS males read better than the national males tested. (Author/MV)

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ED137410

Applications of National Assessment for
School District Program Evaluation and Development (EVA)
(Symposium, Division H)
Session Number 6.03

Annual Meeting
April 4-8, 1977

THE MENOMONEE FALLS, WISCONSIN EXPERIENCE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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TM006 219

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ORIENTATION TO THE PROBLEM

Reading is the most single important component of a student's academic success at each level of learning. A student's success after ones high school years, either for the world of work or for further learning programs, depends to a higher degree on the student's ability to read than on any other single learning area.

All students, both the academically inclined student and the immediate world of work student, need to read to survive in the realistic world of the 1970's. These fundamental reading skills needed in everyday life must be a top priority within the educational programs of our K-12 schools. This concern promoted the Menomonee Falls Public Schools to investigate the Education Commission of the States testing program in the reading area and hopefully retrieve information which could be formulated into a local education project. Thus, "The Menomonee Falls, Wisconsin Experience" was born during the fall of 1974 with implementation taking place during the spring of 1975.

Purpose of the Study

There has emerged a greater need for assessment in the

area of reading of the 17-year-olds at the local level. This need has been actuated by public concern nationally, as well as at the local level, due to some high school graduates not being able to function at a reading level which society deems necessary. Fundamental reading skills, sometimes referred to as survival skills, need to be surfaced in an assessment report which can aid a local district in curriculum offerings or changes.

National Assessment has conducted annual reading assessments since 1969. These reports highlight the measured changes (growth or decline) in educational attainments over time. However, the random sampling procedures used did not facilitate the use of the data at the local level. All data reports were by region to tap the reading pulse of the nation. This procedure was by design and the guidelines of the project.

The purpose of this study was to utilize the substantial bank of knowledge in the national assessment reports along with the personnel expertise at the Education Commission of the States to develop an assessment in reading of the 17-year-olds at the local level. Arrangements were made between the local district and the Education Commission of the States.

The next section will present the descriptive details about the design of the study.

DESIGN OF THE STUDY

Population

Two hundred fourteen 17-year-olds in Menomonee Falls' two high schools participated in a two hour National Assessment of Educational Progress in reading on March 25 and March 26, 1975. The National Assessment District Supervisor was provided with a list of age eligible 17-year-olds from the two high schools. Thus, the random sampling was done by national assessment and adhered to by the local district. The sample of students selected to be assessed included a sample of 120 students from High School A's eligible 320 students and 120 students from High School B's 371 students. At least a total number of 90 students from each high school were conceived to be the needed number of participants. Each high school had 107 participate for a total of 214 students.

Consultant Services and Local Staff Participation

Consultant services from the Education Commission consisted of extended services from the planning through the implementation to the data collection and interpretation. The district Director of Reading Services and Reading Consultant acted as the local coordinators, thereby assigning specific tasks to the high school principals and guidance department personnel.

Materials

The materials for the assessment was provided by National Assessment. These materials included three packages of reading exercises for each of the 214 students involved in the sample. The materials administered in Menomonee Falls were secure and could not be released or duplicated by the district. All booklets sent to the district were returned to the scoring contractor. Five inch reel to reel tapes were also provided. The tapes were paced and served to assist the administrator in standardizing the administration. Menomonee Falls was responsible for providing tape recorders for the sessions and #2 pencils.

Administration

Menomonee Falls provided personnel to administer the packages in the two schools. These personnel were trained for one day in the assessment field practices. The training was provided by the National Assessment District Supervisor responsible for assessment in the Menomonee Falls area. The training included all aspects of the assessment which were of concern to the Menomonee Falls test administrators. Manuals were provided to supplement the training sessions.

Students, who were randomly selected to participate in this project, were notified by a personal letter from their principal. Students were notified that they would not be receiving individual test results, however, the total test results would benefit the district in curriculum planning

for other students in future years. Cooperation, as indicated by student participation, was excellent.

The total 117 students housed in one high school were all tested at the same time and completed all three assessment books. This was in contrast to the original testing procedures implemented in the regular National Assessment programs. Generally small groups, no larger than 10 to 15, participate and complete only one of the three booklets.

The administration of this large population for testing was accomplished by large room facilities and using guidance personnel in shifts to help in the monitoring of the testing program. Although locally administered, with the principals' constant support, a National Assessment Supervisor was in the testing room to monitor the procedures. The combination of supportive personnel may have accomplished the positive attitude of students that prevailed during the total project.

Scoring

Completed and unused materials were boxed and returned to the Measurement Research Center for scoring. The majority of the materials were machine scored and passed through the optical scanner with other National Assessment materials.

Data Treatment

NAEP performed the necessary statistical and data processing services in order to summarize the student assessment data collected from the 17-year-olds. Primarily, this analysis followed the lines of analysis NAEP carries out on its national data and involved some special analyses of particular interest to the local district. No data at the level of the individual student was provided.

Although exercise part and exercise summary statistics are valuable in examining the results of the Menomonee Falls reading assessment, it is perhaps most interesting to consider the data in relation to the National Assessment reading data. The non-parametric sign test was used to test for statistically significant differences between the results for Menomonee Falls students and those for the Year 02 (1970-71 school year) NAEP urban fringe respondents.

Each student took 3 packages for a total of 118 exercise parts. One part (Pack 1 exercise 15D was not scored leaving 117 graded responses.) A p value (estimated percentage correct) and associated standard error was computed for each exercise. Examples of data provided for each exercise are ir Appendix A. Then a mean p across all exercises and a standard error of the mean were computed.

The formulas[1] used in the previous computations are as follows:

(1) p value for individual exercise part

$$p = \sum_{h=1}^{8} \frac{N(h)p(h)}{N} \qquad \left(p(h) = \frac{a(h)}{N(h)}\right)$$

a(h) = Number correct in stratum h

n(h) = Sample size in stratum h

N(h) = Population of stratum h

N = Total Population

[1]Cochran, W.G. (1963) Sampling Techniques. New York. John Wiley and Son (1) p. 106, (2) p. (106), (3) p. 89, (4) p. 90.

(2) Standard error of p

$$\text{est. variance } v(p) = \sum_{h} \frac{N(h)^2}{N^2} \frac{(N(h)-n(h))}{N(h)-1} \frac{p(h)q(h)}{n(h)-1}$$

$$\text{s.e. } (p) = \sqrt{v(p)}$$

$$p(h) = \frac{a(h)}{n(h)}$$

q(h) = 1-p(h)

a(h) = Number correct in stratum h

n(h) = Sample size of stratum h

N(h) = Population of stratum h

N = Total Population

(3) Mean p

$$\bar{p} = \sum_{h} \frac{N(h)}{N} \left(\sum_{k=1}^{n(h)} \frac{y(k)}{n(h)} \right)$$

$y(k) = \frac{\text{number correct}}{117}$ for student k in stratum h

N(h) = Population of stratum h

n(h) = Sample size

N = Total Population

(4) Standard error of the mean p

$$\text{s.e.} \quad (\bar{p}) \sqrt{\sum_{h} \frac{Nh^2(Nh-nh)}{N^2(Nh-1)} \frac{\sum_{k} (yk-\bar{y})^2}{nh-1}}$$

$yk = \frac{\text{number correct}}{117}$ for student k in stratum h

Nh = Population of stratum h

nh = Sample size of stratum h

N = Total Population

ANALYSES OF THE DATA

When the two groups were compared on the basis of all the exercises, it was concluded that the Menomonee Falls students did better on the reading assessment exercises than their Year 02 urban fringe counterparts. The results are presented in Table 1.

Table 1

Performance on All Reading Exercises

Decision Rule Reject HO: if $T \geq n-t$	T	Critical Value (n-t)	Significance Level	Significance
	96	65.1	.05	Yes

The next question to be considered was whether the Menomonee Falls students consistently scored higher than the urban fringe respondents on all of the objectives measured in the reading assessment. As the results presented in

Table 2 indicate, it was concluded that the Menomonee Falls respondents did better than their Year 02 counterparts on the exercises measuring the following objectives: Objective I (Comprehend What Is Read); Objective III (Use What Is Read); and Objective IV (Reason Logically From What Is Read). However, on Objective II (Analyze What Is Read), there is no evidence to indicate that the Menomonee Falls respondents did better on these exercises. While this may be due to the small number of exercise parts measuring Objective II, it did indicate an area that needed to be examined closely by the district's reading staff. Unfortunately, there were not enough exercises to perform such a comparison on Objective V (Make Judgments Concerning What Is Read).

Reading Objectives

Table 2

Performance by Reading Objectives

Decision Rule Reject HO: if $T \geq n-t$	T	Critical Value (n-t)	Significance Level	Significance
Objective I	40	30.8	.05	Yes
Objective II	4	6	.05	No
Objective III	56	35.8	.05	Yes
Objective IV	11	11	.05	Yes

The final question to be considered was whether there were differences among the Menomonee Falls students themselves with regard to performance on the reading assessment exercises. The results of the students from the two high schools on all exercises were compared. The results are presented in Table 3. It was concluded that there were performance differences between students from the two high schools on the reading assesement exercises -- with students from High School A performing better.

Table 3

Comparison of Performance by High Schools on All Reading Exercises

Decison Rule Reject HO: if T < t or T ≥ n-t	T	Critical Value (n-t)	t	Significance Level	Significance
	29	69.1	42.9	.05	Yes

Summary

In summary, the Menomonee Falls students did better than their Year 02 urban fringe counterparts when compared on all of the reading assessment exercises. While they did better on three of the objectives measured by the reading assessment,

the Menomonee Falls students did not do better but equally as well as the Year 02 urban fringe respondents on the exercises measuring Objectives II (Analyze What Is Read). When comparing students from the two high schools, the students from High School A did significantly better than the students from High School B for specific areas. This difference needed further investigation.

Reading Themes

The test data provided information centered around eight reading themes. In Table 4 is the comparison of the total Menomonee Falls students' test results to the National and Urban students' test results.

Table 4

Comparison of Total Menomonee Falls Students to National and Urban Students for Reading Themes

Themes	Significantly Higher at the .05, also .01 and .001	
	National	Urban
1. Words and Word Relationships	yes	yes
2. Graphic Materials	yes	yes
3. Written Directions	yes	yes
4. Reference Materials	yes	yes
5. Significant Facts	yes	yes
6. Main Ideas and Organization	yes	no - equal to
7. Drawing Inferences	yes	yes
8. Critical Reading	yes	yes

Table 5 reflects the comparison of males to females. It should be noted that the males scored significantly higher than their national or urban fringe counterparts and that the females also scored significantly higher than their national or urban fringe counterparts. However, when comparing the female to the male at the local level, areas of strength can be noted. This comparison lends itself to further study of curriculum offerings.

Table 5

Comparison of Performance by Sex

for Reading Themes

	Significant Difference at the .05	Which is Higher?
Total Exercises	yes	females
Themes		
1. Words and Word Relationships	no	both equal
2. Graphic Materials	yes	females
3. Written Directions	yes	females
4. Reference Materials	yes	females
5. Significant Facts	yes	females
6. Main Ideas and Organization	yes	females
7. Drawing Inferences	yes	males
8. Critical Reading	yes	females

The comparison of performance by High School for each reading theme is in Table 6.

Table 6

Comparison of Performance by High Schools

for Reading Themes

	Significant Difference at the .05	Which is Higher
Themes		
1. Words and Word Relationships	no	both high
2. Graphic Materials	yes	High School B
3. Written Directions	yes	High School B
4. Reference Materials	yes	High School A
5. Significant Facts	yes	High School A
6. Main Ideas and Organization	yes	High School B
7. Drawing Inferences	yes	High School A
8. Critical Reading	yes	High School B

DISTRICT UTILIZATION OF DATA

Test results provided indicated Menomonee Falls students were testing higher than their counterparts nationally, and equally as well or higher than their counterparts in the

urban fringe areas. However, the item data provides a very viable process for curriculum considerations at both high schools.

For example, the following list of areas of concern for each high school were extracted from the data:

Areas of Concern

High School A

1. Telephone directory - cost of phone calls out of state, etc.
2. When is there no charge for a long distance phone call?
*3. Traffic ticket - when to appear in court.
4. Traffic ticket - when does the fine have to be paid?
5. Ordering books from an ad - figuring out the shipping costs.
6. Ordering clothes from catalogue with correct size by code number.
*7. Ordering books from book club and arriving at cost.
*8. Coupons used for payment of item.
9. How much to feed an animal (cat or dog).
10. Report on travel tours.
11. Inter-voyage - call number.
12. Description of type of home construction.
*13. Selection of a title for a paragraph.
14. What happened first in performing an experiment.
*15. Inferences stated in paragraphs about cultural attitudes.
16. Lack of understanding sarcasm or irony in sentences and/or paragraphs.

*Lowest area tested

High School B

*1. Income tax form.
2. How to call home from Atlanta, Georgia and St. Paul.
3. Call from Atlanta, Georgia and charge the call.
4. Ordering clothes from a catalogue with correct size by code number.
*5. Ordering books from a book club and arriving at cost.
*6. Coupons used for payment of item.
7. How much to feed an animal (cat or dog).
8. Sequence in experiments.
9. Putting birthdate on application blank.
*10. Use of Science Index
*11. Factual sequence of where someone lived.
*12. Selection of a title for a paragraph.
*13. What happened first in performing an experiment?
14. Inferences:
    a. about cultural attitudes
    b. auto wreck - people dead
15. Arts: paragraph about art before 1940
16. Arts: paragraph about life of Aristotle
17. Article about corporation (big business)
18. Lack of understanding sarcasm or irony in sentences and/or paragraphs.

Areas of Success

The following is a list of high score items compiled from both schools where the Menomonee Falls students scored higher than national or urban fringe students.

1. How to use the sentence or paragraph for meaning.
2. Some words do not have multiple means.
3. Reading a graphic presentation about dropouts.

*Lowest area tested

4. Read a map - Spain, Alaska, etc.
5. Accepting a phone call from St. Paul.
6. Checking account procedures.
7. Ordering correct shoe size.
8. Coupons - what are they good for.
9. Following directions which are hidden within content of material.
10. Application blank for job -
    a. putting in name
    b. putting in address
    c. putting in father's name
    d. putting in telephone number
    e. where you attended school
    f. counselor's name
    g. subjects taken
11. Using area code information for New York.
12. Using guide words in dictionary.
13. Using guide words in encyclopedia.
14. Reading TV schedule.
15. Stock averages
16. Weather forecast
17. Beauty hints
18. Information on bridge
19. Constitution description
20. Fishing permit (license)
21. Reading salary in help wanted ad
22. Understanding atmosphere
23. Job qualifications for TAA hostess
24. Using word cues in paragraph
25. Sequencing of given events
26. What doesn't belong in the following list for completion of a given task
27. Supreme Court decisions
28. Inferences placed in want ads for when to go to work
29. Age requirement implied in want ad.
30. Inferences in paragraph about cultural dress
31. Inferences about height and plants of Mt. Everest
32. Article about human nature
33. Article about tolerance level
34. Opinion chosen for article about atmosphere
35. Article on handicapped persons needs
36. Ideas stated to support an issue concerning comparison of topics.

High School Competency Test Considered

The foregoing data implications upon curriculum was discussed at meetings with the high school principals, guidance counselors, and subject area coordinators. Subject area coordinators concerned with the data which reflect their content area addressed themselves to modification of curriculum offerings. At the present time, both high schools are initiating testing programs in the four major content areas as a graduation requirement given in 11th grade in order to provide opportunity for remediation for students before graduation. This is presently only in the planning stage to be field tested this year.

WAZ Reading Test Developed

The WAZ reading test was devised by the Director of Reading Services K-12 and Reading Consultant K-12 from released National Assessment of Educational Progress reading items and additional test items created and patterned after items in Survival Learning Materials, a publication of the College Reading Association and Basic Skills for Everyone by Standard Publishing.

The test has been administered at both high schools to all students enrolled in the reading center. This population includes the selected remedial reading students at

all grade levels, and the better students choosing developmental reading as an elective in their junior or senior year.

The WAZ test data for the past two years has been used to modify the Reading Center curriculum as well as a source of information for other curriculum areas.

SUMMARY

This report indicates the highlights of the experience the Menomonee Falls School District had with the National Assessment testing program. This experience promoted the district's concern for further assessments. This model would lend itself to grade levels for graduation purposes in many academic areas.

APPENDIX

Theme 1

	Urban Fringe	Menomonee Falls	B High School	A High School
1-7C	28.3	24.5	21.3	28.3
1-9C	57.3	64.8	68.2	61.0
1-19	93.6	97.7	97.3	98.1
3-8	97.4	98.7	100.0	97.2

	Urban Fringe	Menomonee Falls	B High School	A High School
1-2	86.0	91.1	90.7	91.5
1-4C	77.6	77.9	74.0	82.3
1-5A	92.0	96.2	96.0	96.3
1-5B	77.2	92.4	92.4	92.5
1-8A	86.3	92.4	91.5	93.5
1-8B	90.4	93.5	92.6	94.5
1-8C	92.3	98.2	99.1	97.2
2-10A	79.1	76.0	76.1	75.8
2-10B	79.6	84.5	81.0	88.5
2-10C	40.7	59.4	60.6	58.1
2-14A1	81.9	81.1	78.0	84.8
2-14A2	80.9	83.2	80.1	86.7
2-14A3	85.2	89.8	88.5	91.4
2-14A4	70.7	80.0	76.3	84.2
2-14A5	77.7	82.2	79.0	85.9
2-14A6	67.4	81.8	78.3	85.8
2-14A7	66.7	78.0	74.7	81.4
2-14B	86.3	93.1	93.5	92.6
2-17A	97.8	99.6	100.0	99.0
2-17B	94.0	99.1	99.1	99.0
2-17C	94.1	97.6	96.4	99.0
3-1A	97.4	98.2	98.3	98.0
3-1B	95.8	98.6	98.3	99.0
3-2A	60.6	62.8	61.5	64.4
3-2B	60.6	70.7	68.1	73.8

	Urban Fringe	Menomonee Falls	B High School	A High School
3-5A	92.6	93.2	95.5	90.6
3-5B	44.0	33.8	30.6	37.5
3-5C	77.6	77.3	72.3	83.0
3-7A	90.1	95.9	95.5	96.4
3-7B	71.7	88.0	87.3	88.7
3-7C	89.5	91.2	90.9	91.6
3-7D	83.6	78.7	76.9	80.7

	Urban Fringe	Menomonee Falls	B High School	A High School
1-6A	69.9	81.0	77.6	85.0
1-6B	67.5	86.6	85.5	87.9
1-17	77.1	88.8	83.1	95.3
2-2B	88.5	87.9	86.5	89.5
3-13	92.6	97.2	97.3	97.2
3-14 (1)	99.3	99.5	99.1	100.0
3-14 (2)	98.8	98.2	97.4	99.1
3-14 (3)	98.0	98.1	98.2	98.0
3-14 (4)	97.8	99.1	98.3	100.0
3-14 (5)	96.9	97.8	97.4	98.1
3-14 (6)	91.6	95.3	92.9	98.1
3-14 (7)	91.2	96.3	95.6	97.1
3-14 (8)	78.6	91.1	90.0	92.4
3-14 (9)	84.6	91.7	92.9	90.4
3-14 (10)	78.6	83.3	82.1	84.8
3-14 (11)	73.8	83.9	84.8	82.9
3-14 (12)	69.7	80.2	81.1	79.2

	Urban Fringe	Menomonee Falls	B High School	A High School
1-10A	75.7	83.9	87.2	80.0
1-10B	82.9	87.5	85.5	89.8
1-13	84.5	84.9	81.6	88.8
1-14A	22.7	44.3	50.5	37.3
1-14B	91.3	93.7	93.1	94.3
2-4	87.8	91.1	89.2	93.2
2-15A	60.6	69.6	75.6	62.8
2-15B	59.3	66.3	66.5	66.2
2-15C	72.5	81.1	79.1	83.4
2-16A	96.7	99.1	100.0	98.1
2-16B	97.2	100.0	100.0	100.0
2-16C	86.9	95.5	94.7	96.3
2-16D	94.0	94.3	95.4	95.4
2-16E	75.3	81.3	78.1	85.1

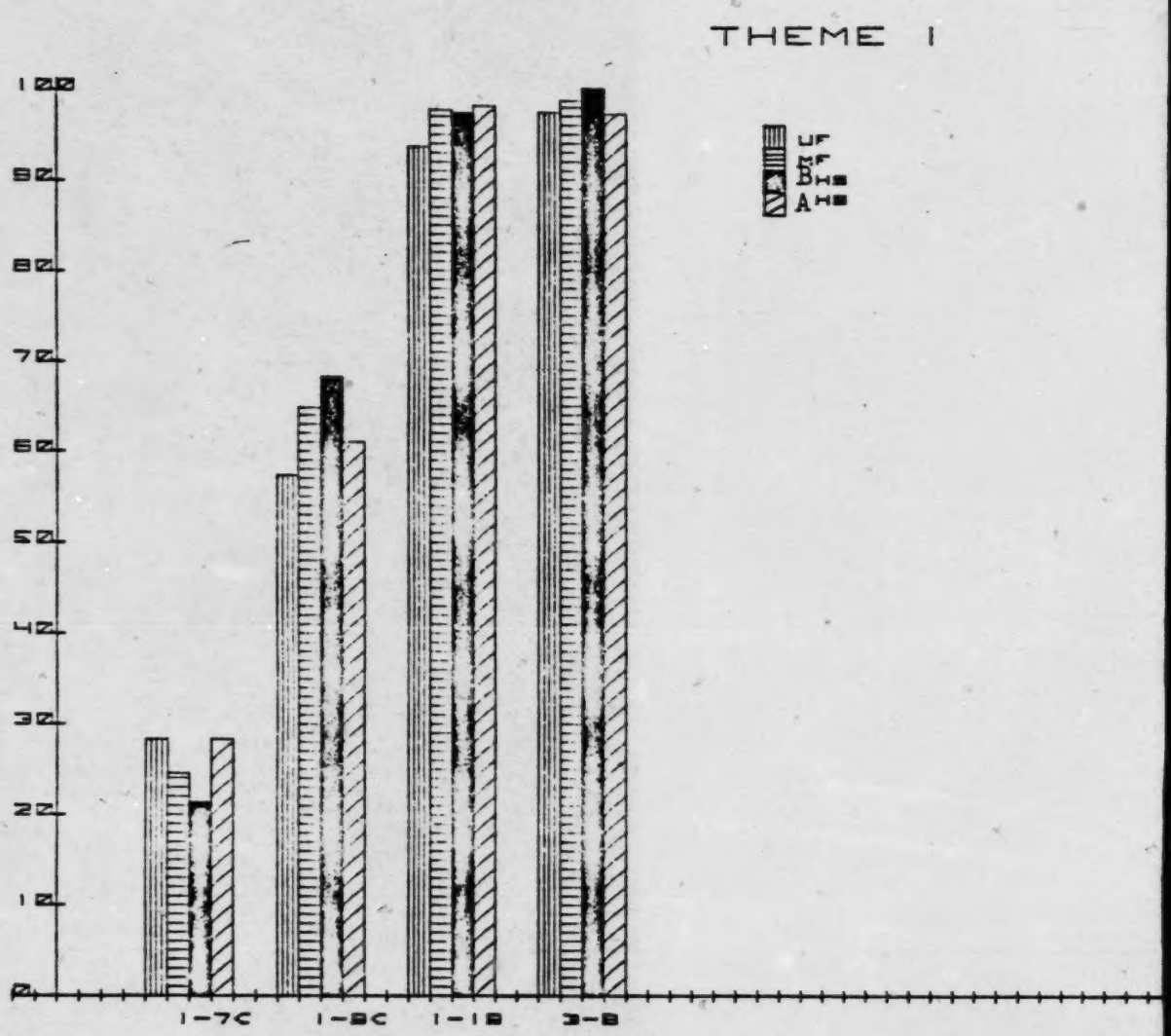
	Urban Fringe	Menomonee Falls	B High School	A High School
1-7A	47.2	47.9	47.3	48.6
1-9B	73.0	76.2	75.7	76.7
1-15A	87.3	90.9	86.1	96.4
1-15B	85.1	88.3	86.4	90.4
1-15C	73.4	71.5	74.6	67.8
1-15E	80.2	83.1	84.6	81.2
1-16D	98.5	99.5	99.1	100.0
2-13A	67.2	75.1	75.5	74.7
2-13B	55.6	68.8	68.7	69.0
3-9	83.1	88.8	85.0	93.3
3-12	69.7	78.3	77.4	79.4
3-15A	93.4	96.4	95.7	97.2
3-15B	96.0	99.6	100.0	99.0
3-15C1	94.5	98.6	98.3	99.0
3-15C2	93.8	98.2	97.4	99.1
3-15D	94.9	98.4	97.8	99.1
3-15E	78.4	82.3	79.9	85.0
3-15F	87.0	87.1	86.5	87.7

	Urban Fringe	Menomonee Falls	B High School	A High School
1-3	77.4	75.2	78.3	71.7
1-9A	56.1	52.3	50.8	54.1
1-18	47.3	57.5	56.2	59.0
2-2A	95.5	96.3	94.7	98.1
2-5	75.4	84.2	81.3	87.6
2-11	26.6	38.6	38.0	39.3
3-10A	66.6	66.4	66.6	66.2

Theme 7

	Urban Fringe	Menomonee Falls	B High School	A High School
1-1	95.4	95.0	96.2	93.6
1-7B	60.2	62.7	60.2	65.6
1-16A1	97.6	99.5	99.1	100.0
1-16A2	94.5	98.1	96.4	100.0
1-16B	96.8	98.9	98.0	100.0
1-20	45.4	56.6	56.2	57.2
2-1	87.0	89.4	87.6	91.5
2-3	80.4	91.1	90.6	91.7
2-8	21.5	24.3	24.2	24.4
3-3	61.0	41.1	40.1	42.4
3-4	39.1	36.1	33.4	39.3
3-6A	47.0	52.0	46.8	58.0
3-6B	58.8	64.1	58.0	71.1
3-6C	39.5	42.5	42.1	43.0

	Urban Fringe	Menomonee Falls	B High School	A High School
1-11	83.9	87.4	88.0	86.7
1-12	96.5	99.1	99.1	99.0
2-6	70.8	81.7	83.8	79.3
2-7	75.6	74.0	69.4	79.4
2-9	81.6	91.7	91.1	92.6
2-12	64.7	71.4	70.7	72.3
3-10B	68.0	77.4	74.7	80.6
3-11	47.8	43.6	43.4	43.8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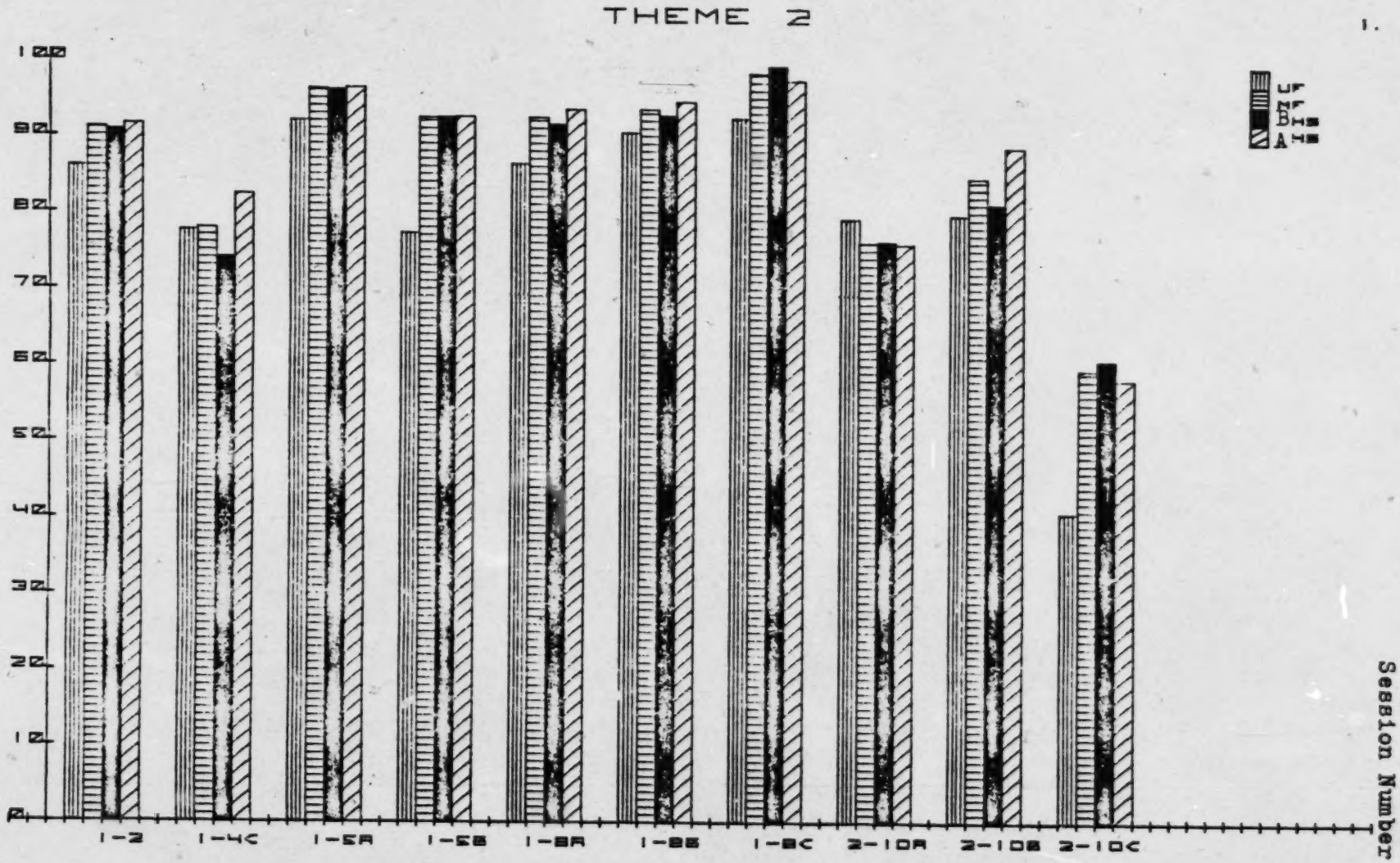
30
20
10
0
1-7C
1-8C
1-1B
3-B



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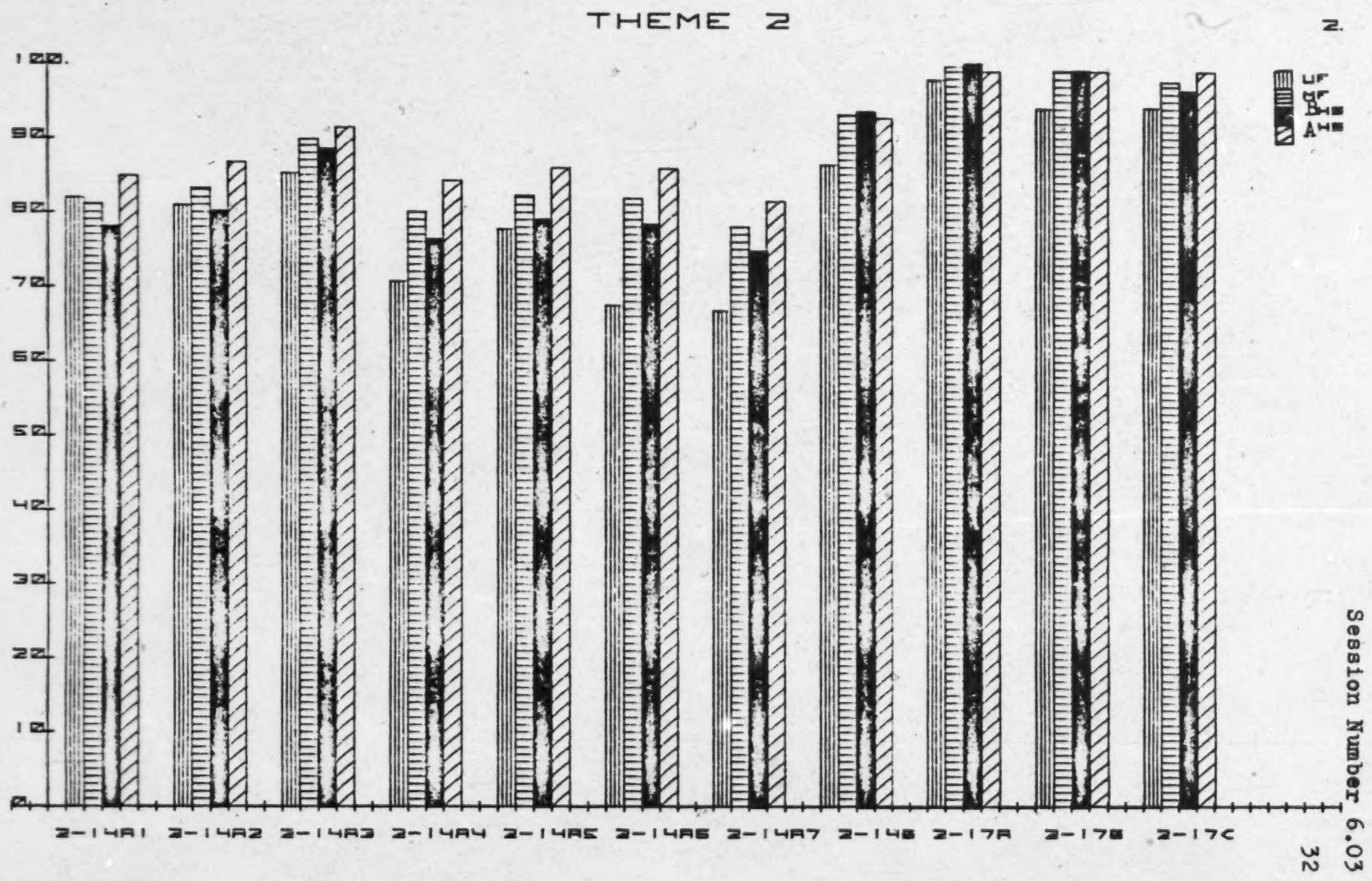
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2-14A2
2-14A3
2-14A4
2-14A5
2-14A6
2-14A7
2-14B
2-17A
2-17B
2-17C
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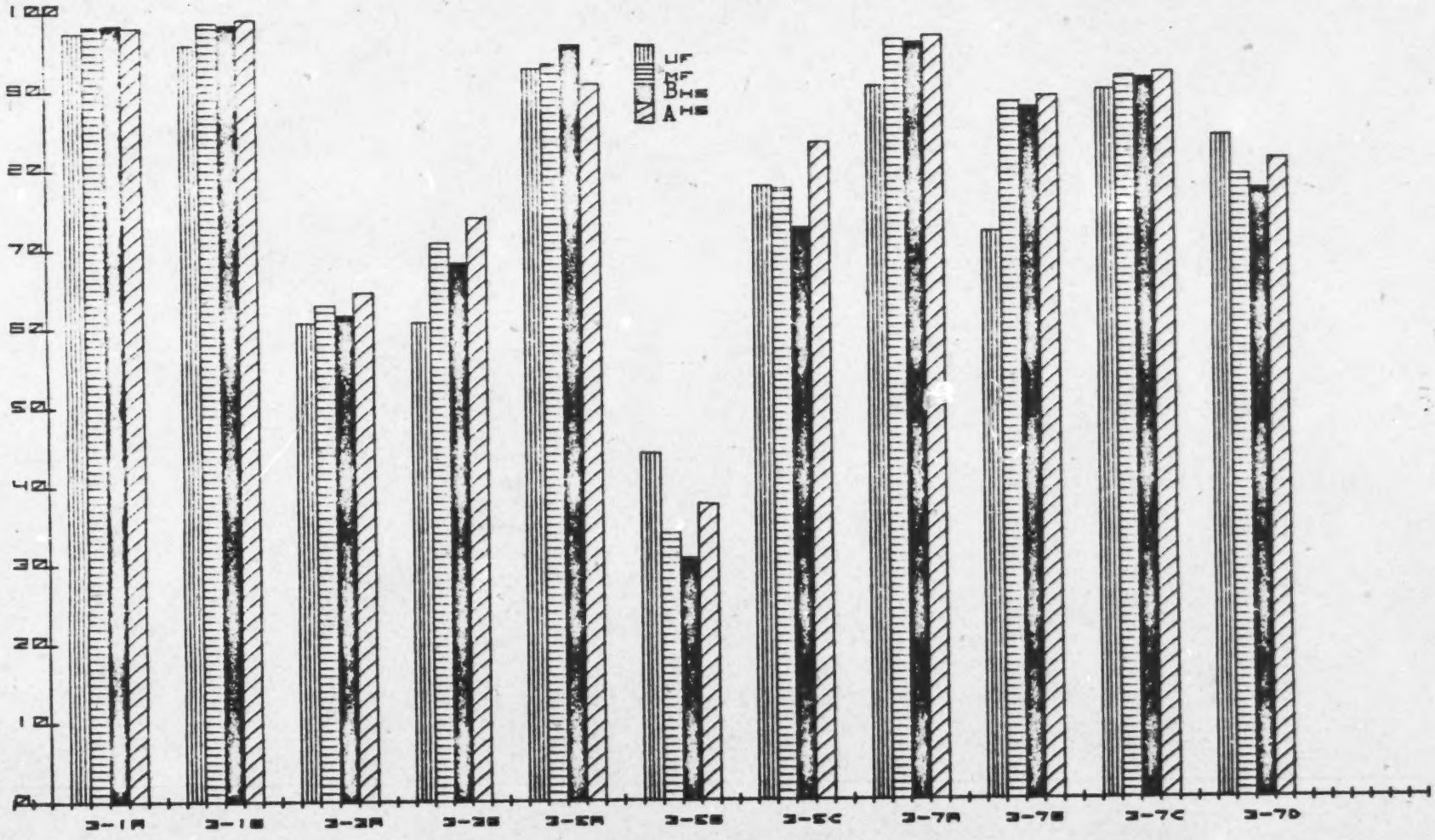
THEME 2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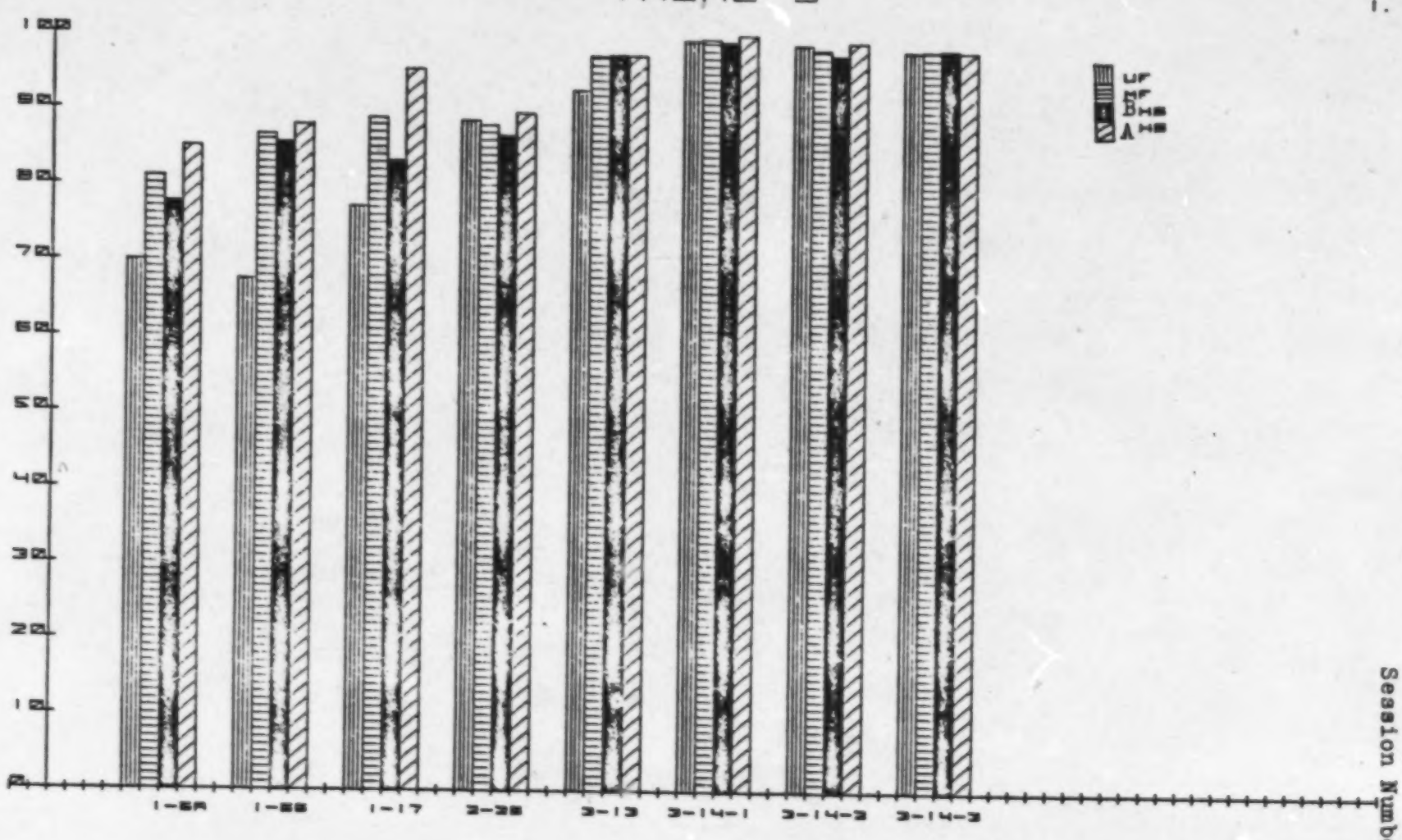
UF
MF
BHS
AHS
3-1A
3-1B
3-2A
3-2B
3-5A
3-5B
3-5C
3-7A
3-7B
3-7C
3-7D



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41

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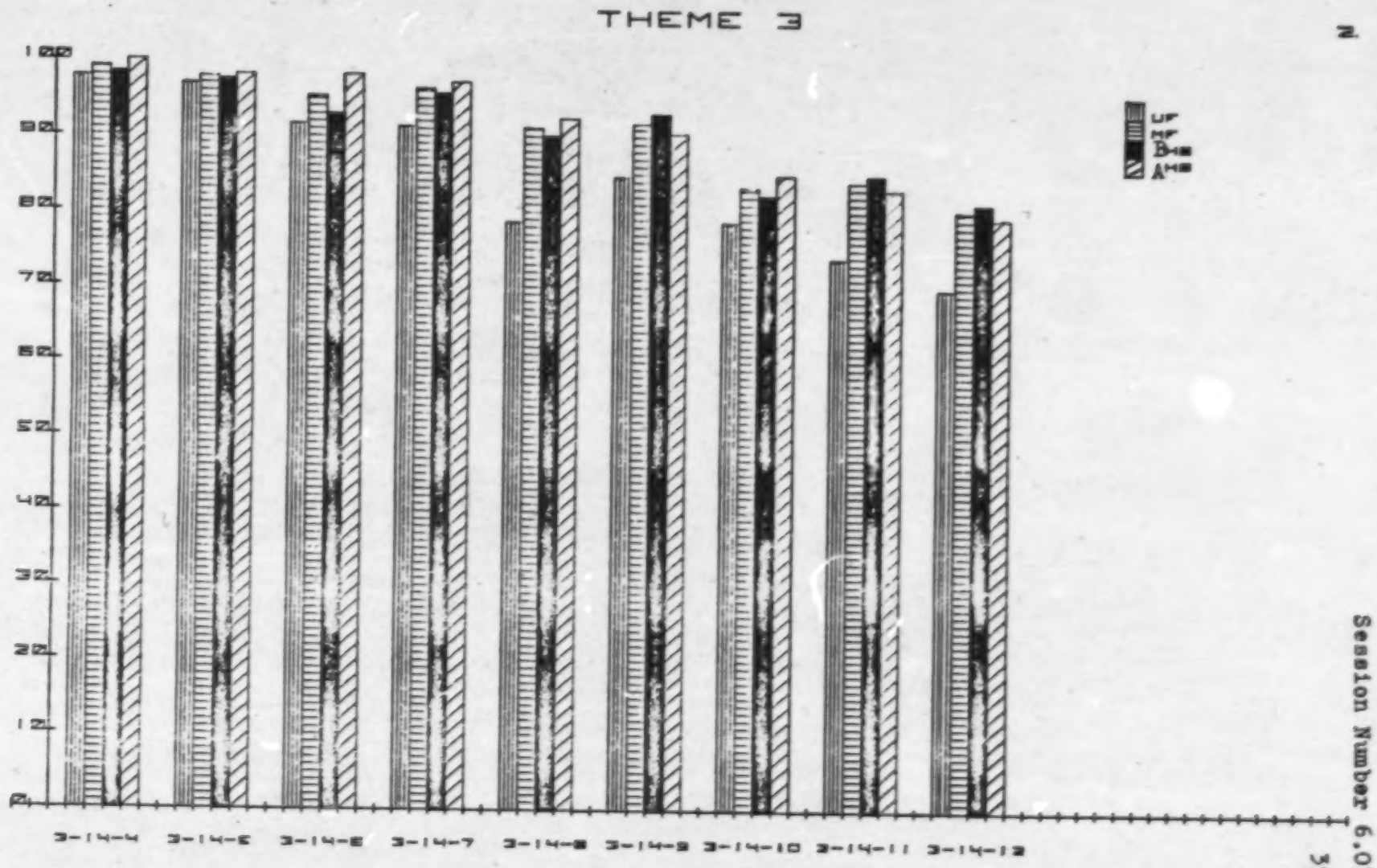

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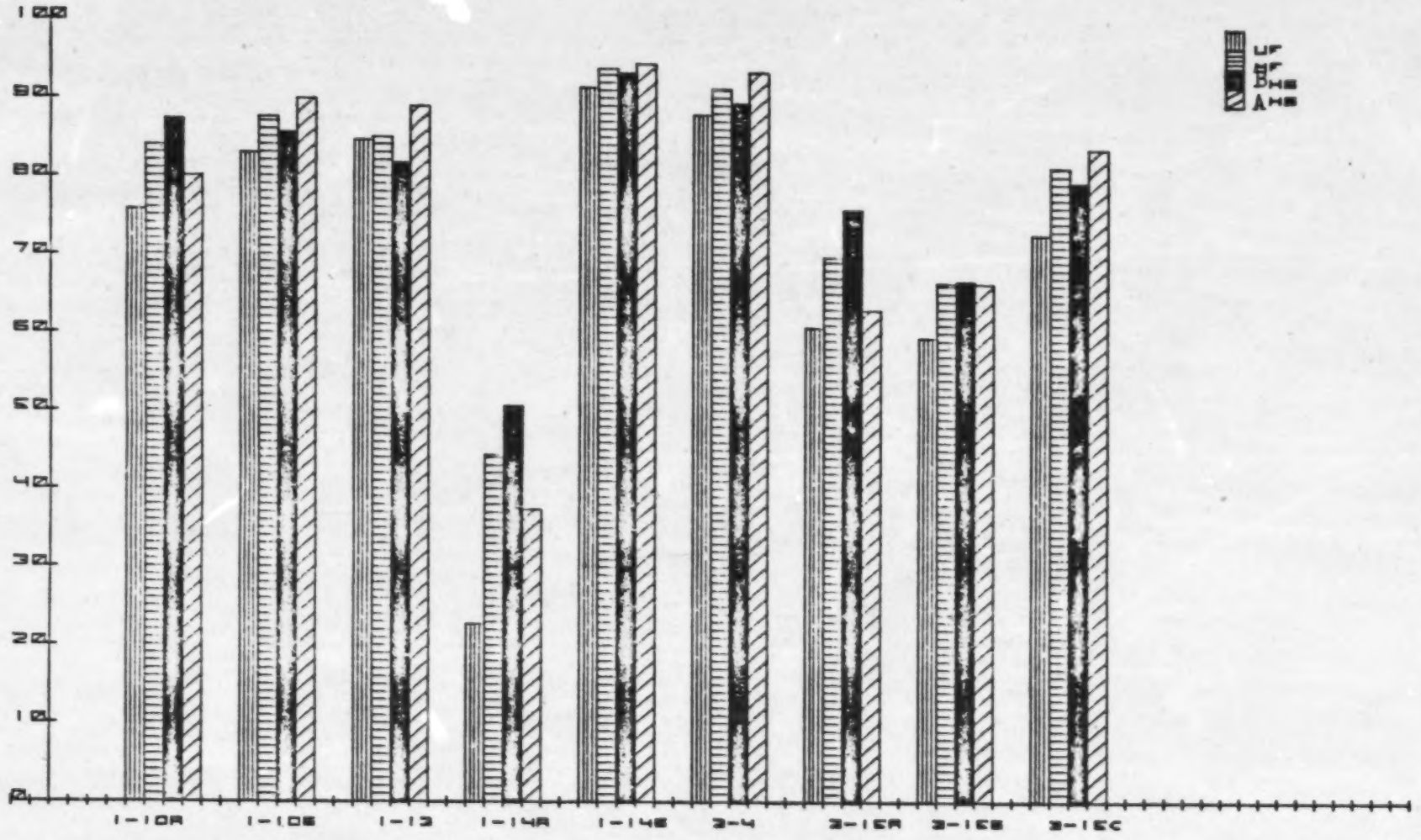
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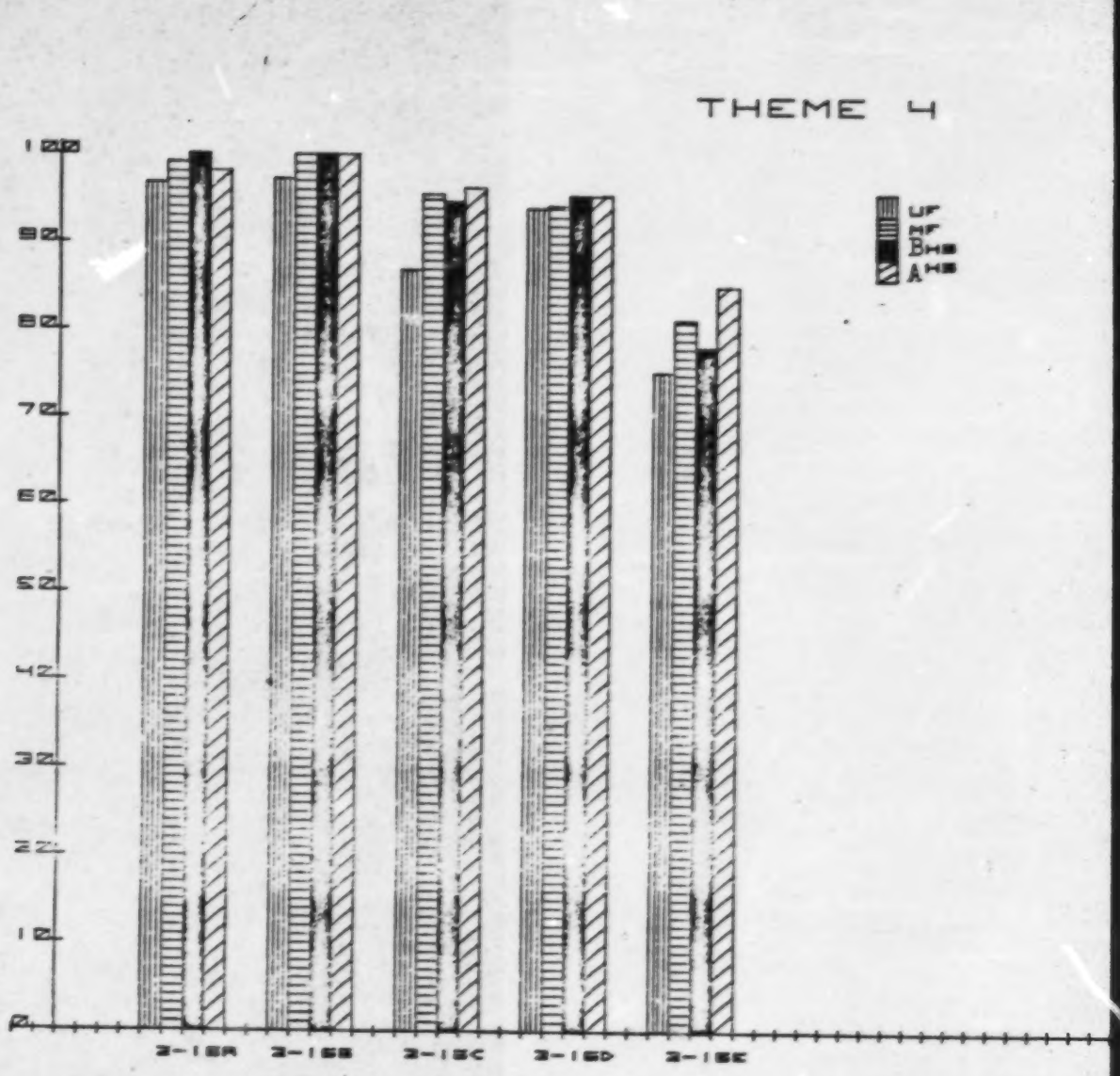
1-10B
1-13
1-14A
1-14B
3-4
3-15A
3-15B
3-15C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MF
BHB
AHB
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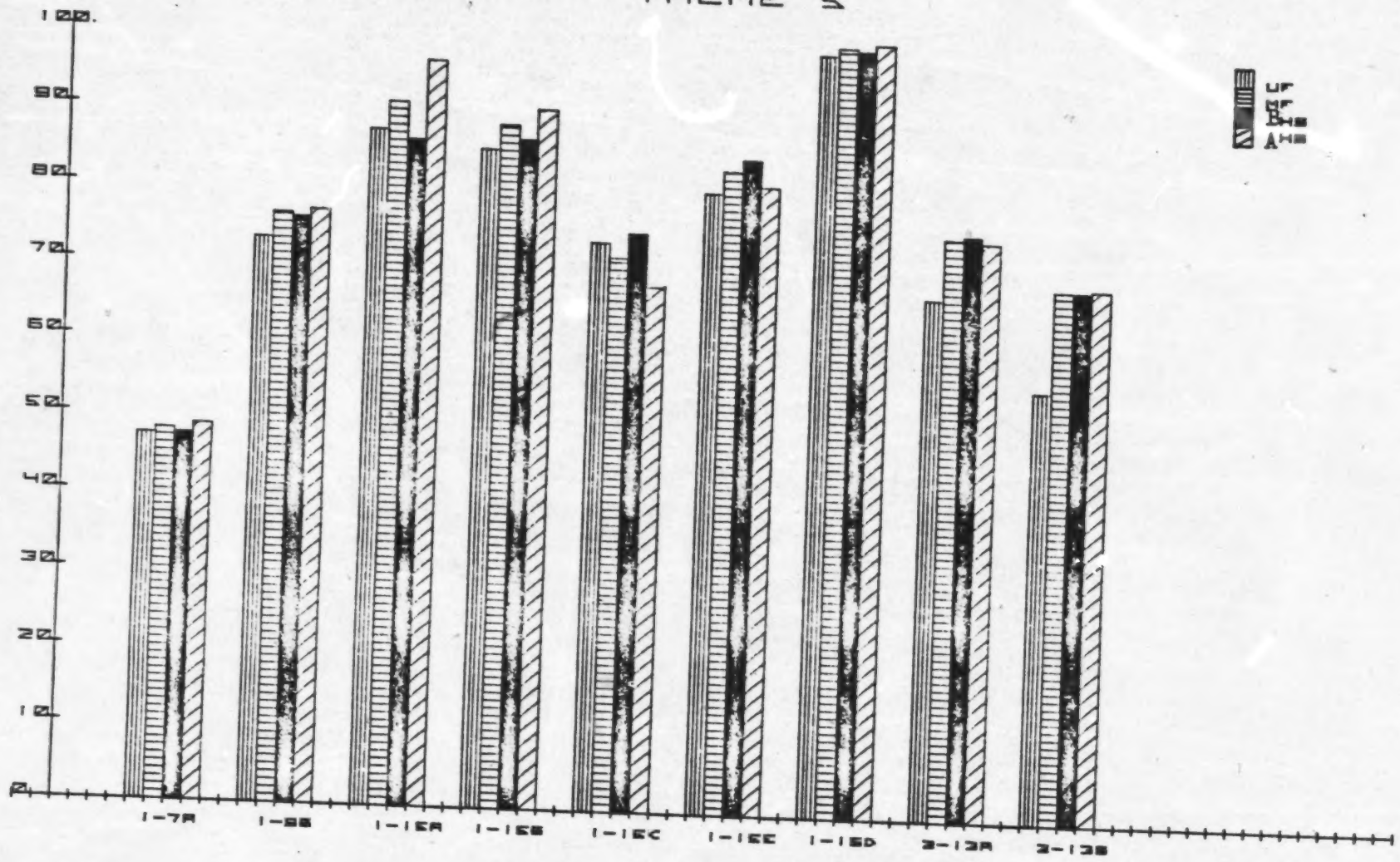
3-15B
3-15C
3-15D
3-15E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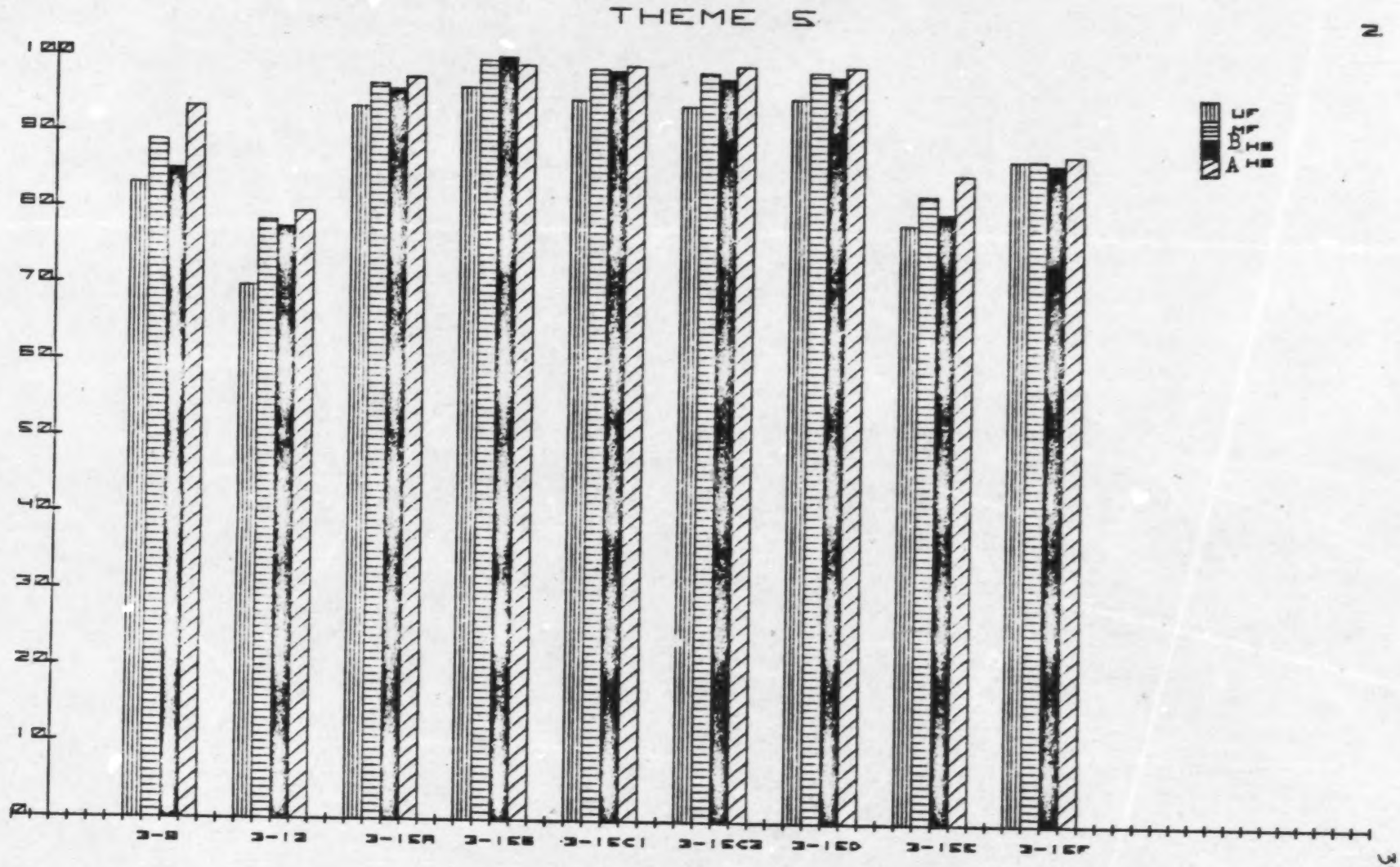
1-15E
1-15D
2-13A
2-13B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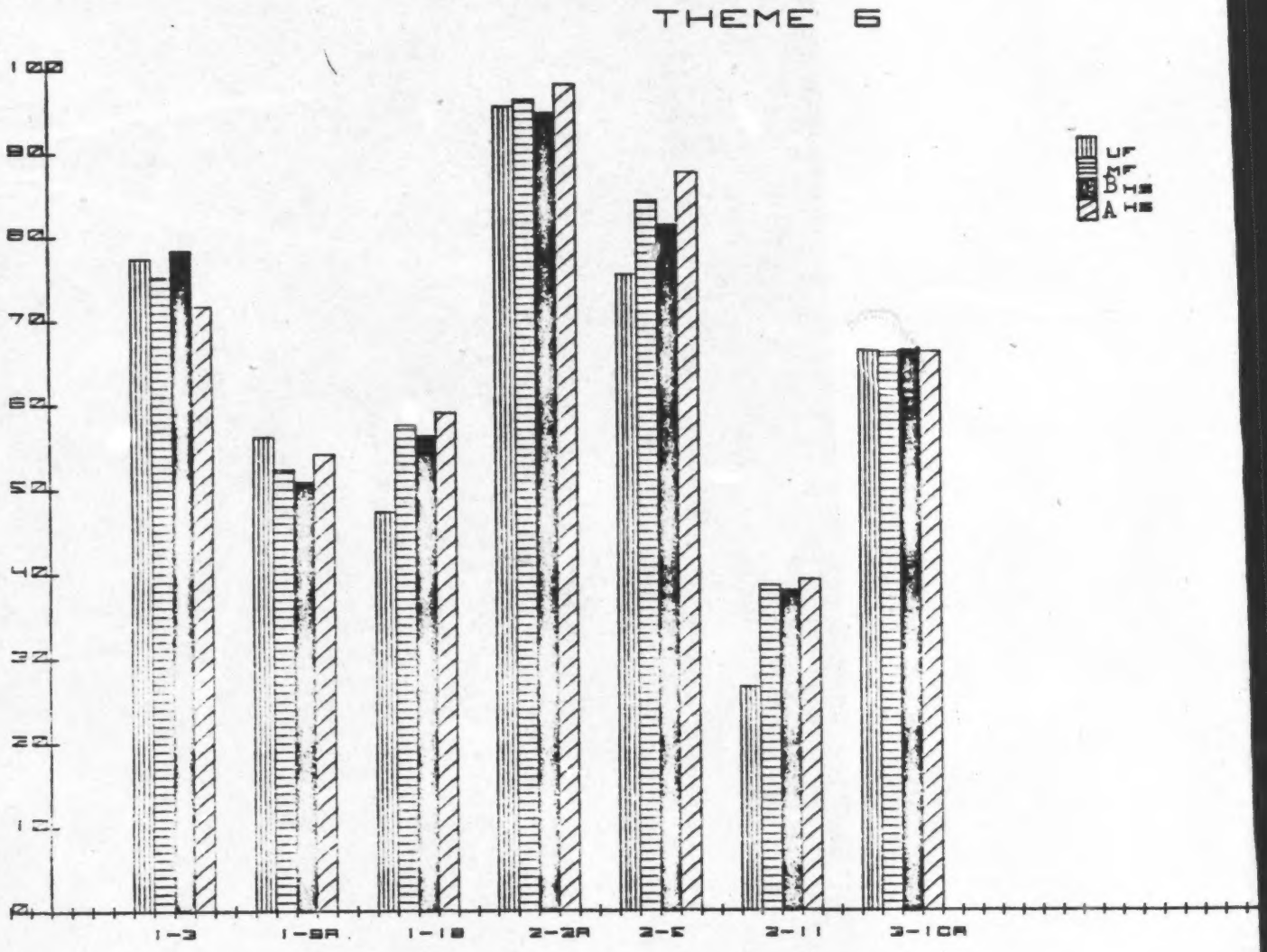
3-15E
3-15F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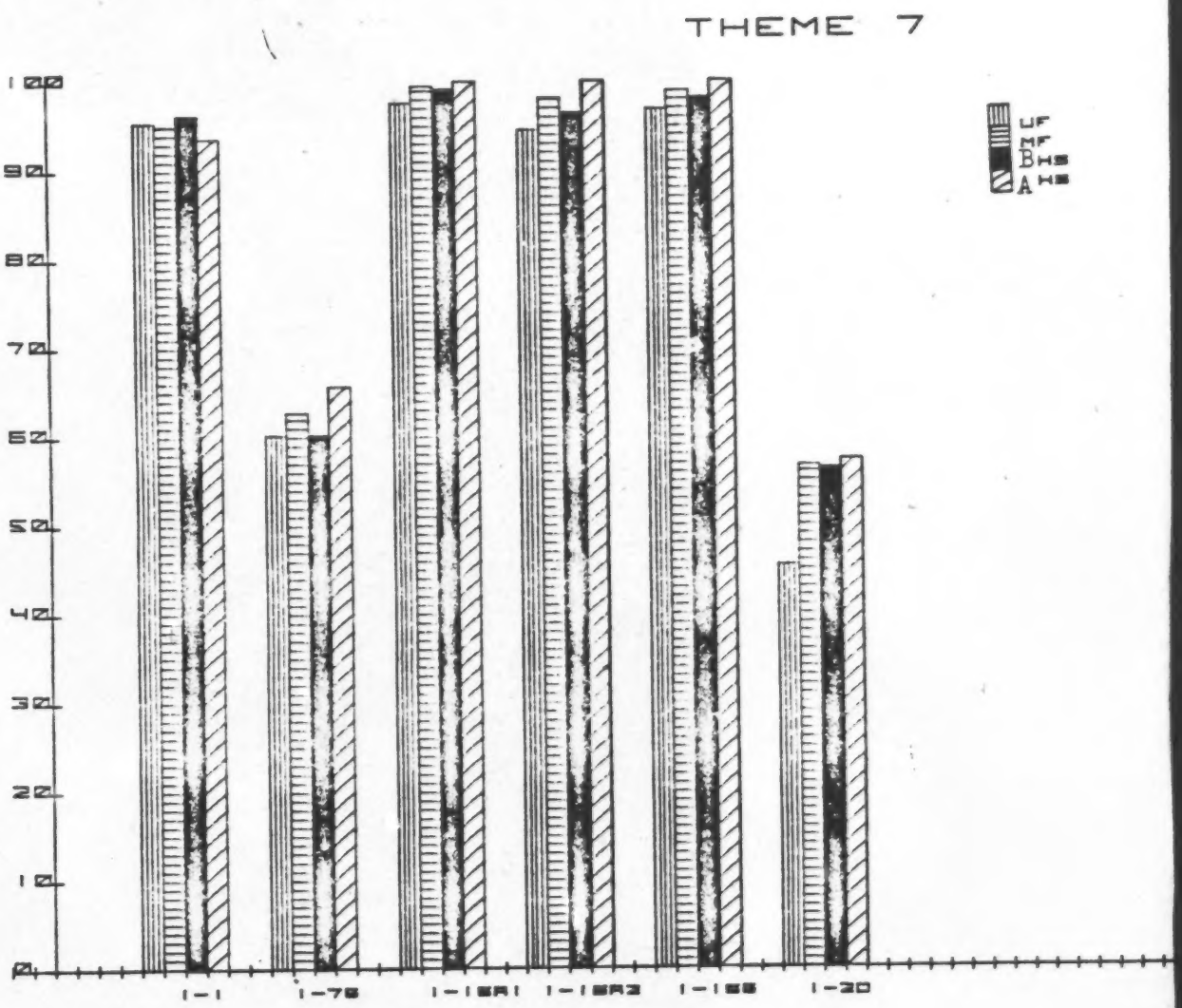
1-9R
1-18
2-2R
2-5
2-11
3-10R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1-75
1-1SR1
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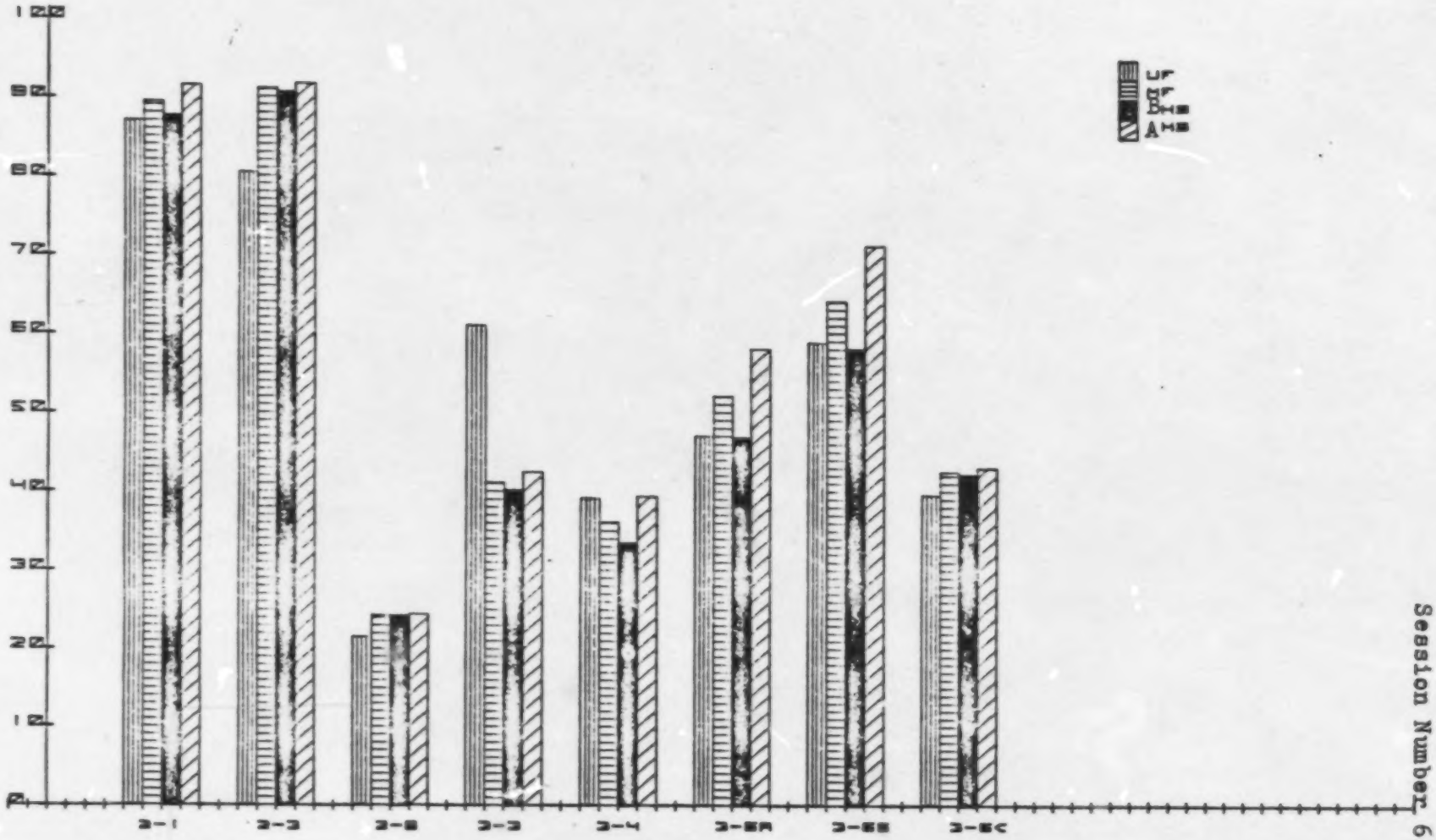
1-1SS
1-20



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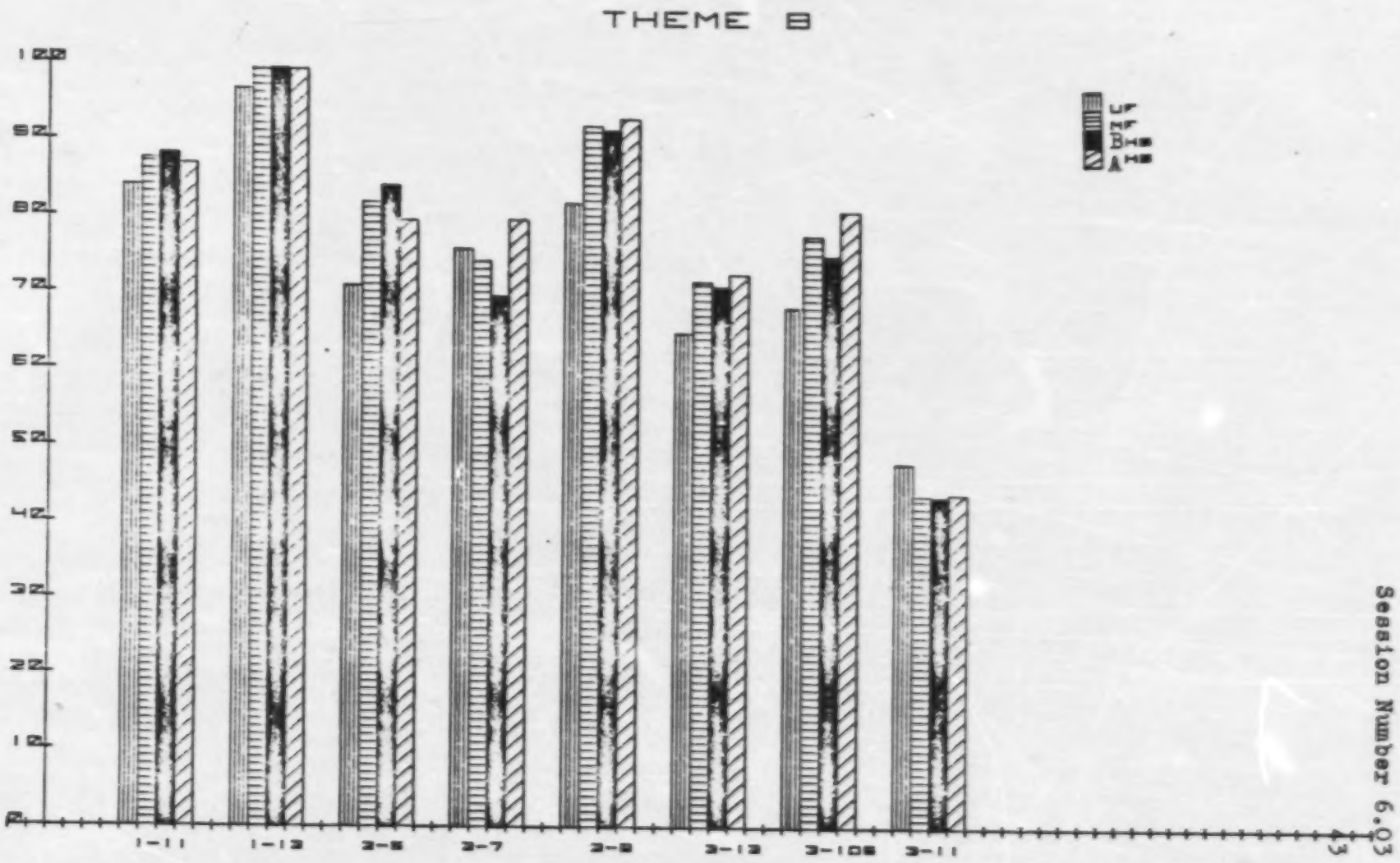
THEME B
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1-11
1-12
2-6
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2-12
3-10B
3-11
A
B
C
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